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Peking Man: The New Skulls and the Evolutionary Problem

ALL but ten years have elapsed since the investigations initiated through the palæontological researches of Dr. J. G. Andersson of the Chinese Geological Survey culminated in the identification of Peking man. It was in 1927 that the late Dr. Davidson Black boldly, on the evidence of a tooth, differentiated a new genus of man, *Sinanthropus pekinensis*. His temerity was fully justified two years later when in December 1929, Mr. W. C. Pei found the first skull of Peking man in the cave of Choukoutien ; but it is only now, after the discovery of the three new skulls in November last, which are described by Prof. Franz Weidenreich in this issue of NATURE (see p. 269), that it is possible to appreciate in something like true perspective the momentous character of Dr. Davidson Black's first diagnosis.

The early recognition of the distinctive character of the human relics from these Pleistocene deposits eliminated many possibilities of doubtful interpretation, and prepared the way for the pregnant studies of the bearing of this great discovery on the general problem of human evolution, by which the late Sir Grafton Elliot Smith, Sir Arthur Keith, and others have made Peking man a crucial point in discussion. Much, however, as they have rested their argument for the course of evolution by which modern man has appeared upon indications afforded by distinctive or rudimentary characters in *Sinanthropus*, it will be gathered from the description of the new skulls by Prof. Weidenreich, and from his comparative study of their morphology, that the interpretation of *Sinanthropus* in terms of the evolutionary process now involves a change even more fundamental than anthropologists had contemplated.

Great significance in an evolutionary context has been attached to the combination of primitive and modern, if rudimentary, characters exhibited in Peking man. Prof. Weidenreich himself in recent studies has extended and given greater precision to this diversity of character, more especially in his investigations of the teeth and the conformation of the jaw, suggesting not only that in these characters does Peking man tend to approach modern man, but also indicating specifically a resemblance to certain of the modern Mongols. He now argues that this resemblance is further emphasized in the recent discoveries, while the broad and flat nasal bridge in one specimen, immediately, if tentatively, institutes a further point of resemblance to the Mongol in the possession of the characteristic, flat nose.

One of the most remarkable characters to which attention is directed by Prof. Weidenreich is the conformation of the brain, as shown in the endocranial cast ; but even more striking in this connexion is its remarkable size. In both male and female it is large for a primitive brain ; but in the male it is placed at approximately 1200 c.c., which is within no very distant range from the capacity of the modern brain, especially in the female. We need, then, feel no surprise at the cultural development of this early and primitive type of man as it is to be seen in the artefacts and in the evidence for the use of fire found in the cave of Choukoutien.

It is, however, when Prof. Weidenreich turns to the comparative study of *Sinanthropus* that his conclusions attain their most startling character. For here he now finds that the new evidence definitely places *Sinanthropus* at a lower stage in development than *Pithecanthropus*, the ape-man

of Java, approximately in a geological sense his contemporary. Discussion, which hitherto has proceeded on the line that *Sinanthropus*, while standing in relation to *Pithecanthropus*, was definitely on the line of advance, is thus not a little confounded. On the other hand, Prof. Dubois, in his study of *Pithecanthropus* and early man in Java (see p. 294), offers a way out by removing *Pithecanthropus* from the human line and associating him with the gibbon, while in the recently discovered Solo man of Java—the *Javanthropus* to which Weidenreich and others see resemblances in Peking man—he sees, not a line leading to the Neanderthal stock destined to die out, but a member of a group, including Rhodesian and Wadjak man, which is on its way to becoming modern man in the person of the Australian aborigine.

Anthropologists, while congratulating Prof. Weidenreich on this great discovery made under the auspices of his laboratory, are deeply indebted to him for the dispatch with which he has placed at their disposal the new material for further discussion of this intricate and fascinating problem.

The Agricultural Research Council

THE Agricultural Research Council took over, on its formation in 1931, the functions of the Development Commissioners' Advisory Committee on Agricultural Research, and was charged with the duty of organizing and developing research so that the resources available for that purpose should be used to the utmost advantage. The wisdom with which that committee had developed and guided research had won for it the admiration of farmers and scientific investigators alike, particularly of those who could recall the backward position of Great Britain in agricultural research in the early years of this century. Research had so developed, however, that a more comprehensive body was needed for its guidance, one with powers such as that of forming committees and sub-committees which could bring the experience of specialists to bear on the various problems.

While the Agricultural Research Council is analogous to the Medical Research Council, and to the Department of Scientific and Industrial Research, its administration is more complicated because it has not built up, nor does it control, its own research centres. The general relationship of the Agricultural Departments with the research institutes, university departments of agriculture and agricultural colleges remains unchanged, the Council giving criticism and advice on research programmes and grants; in 1934–35 the sum of £329,695 was included for research and advisory work in the estimates of the Agricultural Departments with appropriations in aid from the Development Fund. The Council has powers to initiate special services—a function eminently appropriate for a body having such a 'bird's-eye-view' of research and of the industry as a whole.

The second report of the Council* describes the continuation of a survey of agricultural research in Britain, but is devoted more particularly to those activities or institutions which have been the object of special inquiry during the period under review. Animal diseases continue to receive special attention, in accordance with a policy adopted by the Council early in its career—that of furthering work on certain diseases which might spread should the Government decide to encourage the live stock industry. The Council found that an increase in the number of trained investigators was one of the most urgent needs in this field of research, and took appropriate action.

Amongst the work of the specialist committees of the Animals Diseases Committee, that on braxy and braxy-like diseases may be noted; after reviewing the situation, it was decided that, as a foundation for further successful research in this field, more accurate information should be obtained on such questions as the incidence of infections of sheep by anærobic bacilli, and a special investigator was appointed to undertake a survey. As an example of research of special value to large tracts of the Empire, as well as to Britain, reference may be made to the work on sheep blow-flies at Bangor and at Aberdeen. Promising results have been obtained by studying separately the several factors involved in blow-fly attacks; thus, at Bangor, high humidity at the base of the wool was found to be one of the essentials for the eggs and larvæ of the fly, and work is in progress to investigate the conditions causing high humidity.

* Committee of the Privy Council for the Organisation and Development of Agricultural Research. Report of the Agricultural Research Council for the period October 1933—September 1935. (Cmd. 5293.) Pp. iv+130. (London: H.M. Stationery Office, 1936.) 2s. net.